

Appln. No. 10/764,155
Amdt./Response filed July 10, 2006
replying to Office Action of February 8, 2006

PATENT
Customer No. 22,852
Attorney Docket No. 7303.0102-00

REMARKS/ARGUMENTS

In response to the Office Action dated February 8, 2006, Applicants respectfully request the Office to enter the following amendments and consider the following remarks. By this response, Applicants amend claims 1, 9, 12-15, 17, 19 and 21. No claims are added or canceled. Thus, after entry of this paper, claims 1-23 will remain pending in this application.

In the Office Action the Examiner (i) rejected claims 1 and 12 under 35 U.S.C. §102(e) as being anticipated by Kolmanovsky et al., U.S. Patent No. 6,693,787 ("Kolmanovsky"); (ii) rejected claims 2-5 and 13-23 under 35 U.S.C. §103(a) as being unpatentable over Kolmanovsky in view of Poon et al., U.S. Patent application Publication No. US2002/0185983 ("Poon"); and (iii) rejected claims 6-11 under 35 U.S.C. §103(a) as being unpatentable over Kolmanovsky, in view of Teng et al., U.S. Patent No. 6,472,777 ("Teng").

35 U.S.C. § 102(e) Rejections

Claims 1 and 12 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kolmanovsky.

Without acquiescing to the rejection and in the interest of expediting prosecution, Applicants have amended claims 1 and 12 to further clarify the recited invention. Claims 1 and 12 now recite not only a "coarse" adjustment phase, but gap size adjustment **during** the coarse adjustment phase. Specifically, claims 1 and 12 are amended to recite that, "during a coarse adjustment phase," the controller (claim 1) or actuator (claim 12) "adjusts a gap size between the target member and an attracting member that provides acceleration during the coarse adjustment phase, and the [controller/actuator] adjusts a gap size between the target member and an attracting member that provides deceleration during the coarse adjustment phase." No new matter is added via these amendments. Applicants respectfully assert that Kolmanovsky does not teach or suggest the combination of features now recited.

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For example, the recitations regarding a controller (claim 1) or an actuator (claim 12) that "adjusts a gap size between the target member and [] attracting member[s] that provides acceleration [and deceleration] during the coarse adjustment phase," are not found in Kolmanovsky. Instead, Kolmanovsky pertains to velocity control of a single armature 20 (see, e.g., Fig. 1) in relation to an electromagnet via an algorithm that determines "a neutral position of a virtual spring" and uses feedback to control a current that moves the armature, with no teaching or suggestion of gap adjustment during a coarse phase or attracting members that provide such adjustment whatsoever. See Kolmanovsky, col. 1, line 61 - col. 2, line 4. Kolmanovsky's admittedly simplistic armature control system (i.e., sensor, armature velocity controller, and algorithm/feedback components) bear no relation to the gap adjustment and related coarse adjustment phase limitations now recited in the claims. Indeed, the acknowledged "improvement" of Kolmanovsky is the "control [of] the velocity of the armature as it approaches the pole face of the electromagnet thereby reducing the impact velocity of the armature." *Id.*, col. 2, lines 12-19. Therefore, Kolmanovsky cannot anticipate amended claims 1 and 12 at least due to its failure to teach or suggest an apparatus capable of performing the claimed gap adjustment in connection with the recited adjustment phase.

For at least these reasons, Applicants respectfully request that the rejection of claims 1 and 12 under 35 U.S.C. §102(e) be withdrawn and the claims allowed.

35 U.S.C. § 103(a) Rejections

Claims 2-5 and 13-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kolmanovsky in view of Poon.

Claims 6-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kolmanovsky in view of Teng.

Again, without acquiescing to the rejection and in the interest of expediting prosecution, Applicants amend claims 1, 9, 13-15, 17, 19 and 21, from which claims 2-8, 10-11, 16, 18, 20, and 22-23 depend, to further clarify the recited invention.

Specifically, claim 1 is amended to recite that "during a coarse adjustment phase, the

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controller adjusts a gap size between the target member and an attracting member that provides acceleration during the coarse adjustment phase, and the controller adjusts a gap size between the target member and an attracting member that provides deceleration during the coarse adjustment phase," claim 9 is amended to recite "adjusting a gap size between the target member and at least one of the opposing attracting members that provides an acceleration or deceleration force to the target member during a coarse stage adjustment phase," and claims 13-15, 17, 19, and 21 are amended to recite "wherein the controller is adapted to adjust gap size between the target member and one or more attracting members that provide an acceleration force and/or a deceleration force to the target member during a coarse adjustment phase." Applicants respectfully assert that, based at least on the absence of these recitations, the cited combinations of references fail to render unpatentable the combinations of features now recited.

As set forth above, the Office's primary reference, Kolmanovsky, includes no disclosure of a coarse adjustment phase whatsoever, thus cannot possibly teach or suggest gap adjustment performed *during* a coarse adjustment phase.

Further, each of the Office's secondary references, Poon and Teng, taken alone or in combination with Kolmanovsky, also fail to teach or suggest the recitations of the amended claims. For example, Poon fails to teach or suggest a gap adjustment performed during a coarse adjustment phase and associated limitations now recited in amended claims 2-5 and 13-23. Poon discloses an E-I scanning stage apparatus including two stages (i.e., structures 506 and 510, of Figs. 5a-5c) that are coupled, for example, by means of a cable or cord. The couplings of Poon enable acceleration of the second stage (510) along with the first stage (506), without the need for a dedicated high force actuator for the second stage. This provides for more efficient, higher acceleration apparatuses, thereby enabling increased throughput in the overall fabrication process. Poon, paragraphs 39-43. Although positioning and acceleration is discussed in connection with the disclosed stages (structures), the adjustment of gaps *during* a coarse adjustment phase forms no part of the teachings or suggestions of Poon. See, e.g., Poon, paragraphs 46-69.

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Similarly, Teng also fails to teach or suggest at least gap adjustment performed during a coarse adjustment phase and associated limitations, as now recited in amended claims 6-11. Instead, Teng is directed to a calibration process for a position sensor associated with opposing electromagnetic actuators "using a self-alignment process, e.g., during the system startup " See Teng, col. 2, lines 2-4. The calibration/alignment procedure of Teng is a methodology involving measurement of actuator currents as well as the E-I core gap using a capacitive sensor, in connection with providing feedback enabling calibration of the actuators to "null" positions. *Id.*, lines 12-24. Accordingly, Teng's software-implemented process, typically performed at system startup, fails to teach or suggest any control of gap size *during* a coarse adjustment phase, as now recited in the claims.

Therefore, Poon and Teng also fail to teach or suggest apparatuses or methods including, *inter alia*, the claimed gap adjustment *during* the recited coarse adjustment phase as well as other associated limitations, as now specified in the amended claims. Furthermore, no combination of the Kolmanovsky, Poon and Teng references nor the knowledge of a person having ordinary skill in this art cure the deficiencies noted above. Thus, the presently-claimed methods and apparatuses are not obvious in view of the cited art.

Therefore, for at least the above reasons, Applicants respectfully submit that claims 2, 13-15, 17, 19 and 21 are patentable over the combination of Kolmanovsky and Poon. Accordingly, Applicants respectfully request that the rejection of claims 2, 13-15, 17, 19 and 21 under 35 U.S.C. § 103(a) be withdrawn and the claims allowed. Additionally, claims 3-5, 16, 18, 20, and 22-23, which directly or indirectly depend from amended claims 1, 13-15, 17, 19 and 21, are allowable for at least the same reasons.

Similarly, for at least the above reasons, Applicants respectfully submit that claims 6 and 9 are patentable over the combination of Kolmanovsky and Teng. Accordingly, Applicants respectfully request that the rejection of claims 6 and 9 under 35 U.S.C. § 103(a) be withdrawn and the claims allowed. Additionally, claims 7-8 and 10-11, which directly or indirectly depend from amended claims 1, 6, and 9, are allowable for at least the same reasons.

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Conclusory Remarks

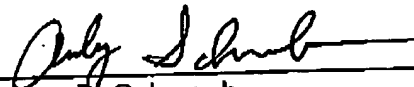
In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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